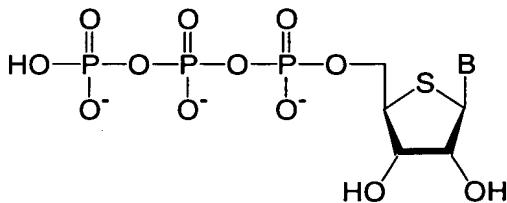


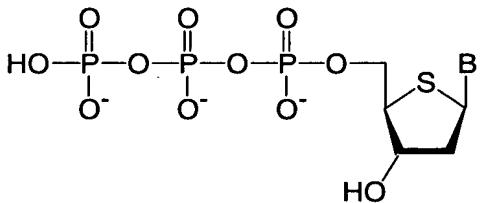
Claims

1. A compound of formula I:



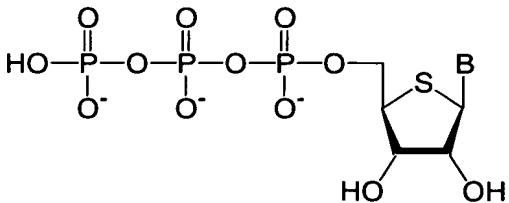
[wherein B is a nucleobase selected from the group consisting of adenine, guanine, cytosine, uracil and hypoxanthine].

2. A compound of formula II:

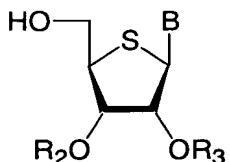


[wherein B' is a nucleobase selected from the group consisting of adenine, guanine, cytosine, thymine, uracil and hypoxanthine].

3. A method for synthesizing a compound of formula I:

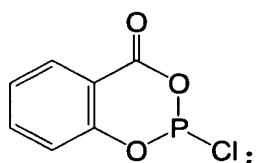


[wherein B is a nucleobase selected from the group consisting of adenine, guanine, cytosine, uracil and hypoxanthine], said method comprising reacting a compound of formula III:



[wherein B is a nucleobase selected from the group consisting of adenine, guanine, cytosine, uracil and hypoxanthine, and each of R<sub>2</sub> and R<sub>3</sub> is, independently a protecting group of a hydroxyl group]

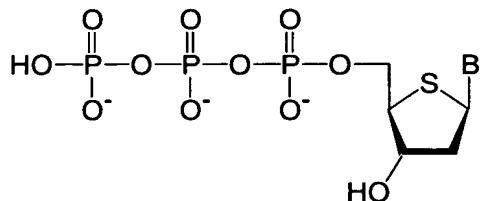
with a compound of formula IV:



reacting the resulting intermediate with pyrophosphoric acid; and

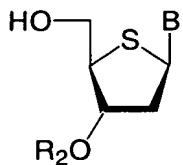
conducting iodo-oxidation, hydrolysis and deprotection to obtain the compound of formula I.

#### 4. A method for synthesizing a compound of formula II:

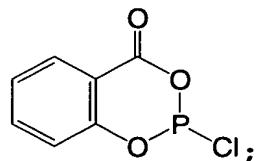


[wherein B is a nucleobase selected from the group consisting of adenine, guanine, cytosine, thymine, uracil and hypoxanthine].

said method comprising reacting a compound of formula V:

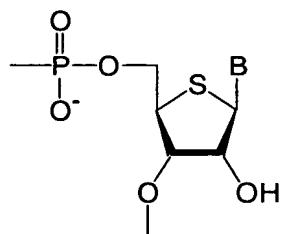


[wherein B is a nucleobase selected from the group consisting of adenine, guanine, cytosine, thymine, uracil and hypoxanthine, and R<sub>2</sub> is a protecting group of a hydroxyl group] with a compound of formula IV:



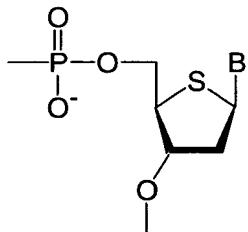
reacting the resulting intermediate with pyrophosphoric acid; and conducting iodo-oxidation, hydrolysis and deprotection to obtain the compound of formula II.

5. A process for producing an oligonucleotide containing at least one nucleoside unit of formula VI:



[wherein B is a nucleobase selected from the group consisting of adenine, guanine, cytosine, uracil and hypoxanthine] comprising conducting RNA chain elongation reaction with RNA synthetase in the presence of the compound of claim 1 or the compound produced by the method according to claim 3.

6. A process for producing an oligonucleotide containing at least one nucleotide unit of formula VII:



[wherein B is a nucleobase selected from the group consisting of adenine, guanine, cytosine, thymine, uracil and hypoxanthine]

comprising conducting DNA chain elongation reaction with DNA synthetase in the presence of the compound of claim 2 or the compound produced by the method according to claim 4.